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ABSTRACT

The report deals with the design, development, and evaluation of a short-term training program directed toward modifying attitudes and acquiring new information and skills about sensory impairments frequently found among institutionalized elderly people. The training attempted to provide participants with a clearer understanding of the implication of visual and hearing loss in the elderly and to encourage more positive attitudes and empathy toward their client population. The three-hour training module consisted of lecture, film, discussion, and simulation. Participants were over 300 women, 18-74 years, working in institutions, agencies, or community programs as institutional staff, agency workers, and interested volunteers. Using a non-equivalent control group design, the program was evaluated for content effectiveness and techniques of adult instruction. Pre- and post-testing was conducted to measure knowledge gain and attitude change. Although complete data analysis is in process, there appears to be a definite indication that older people began the training with a more negative view of aging than younger groups in all categories of attitudes. For all age groups, training seemed to change attitudes concerning stereotyping in a more positive direction. However, training also resulted in higher anxiety about aging in all age groups. (EA)

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EVALUATION OF SENSORY IMPAIRMENT PROGRAM FOR GERONTOLOGICAL SERVICE PROVIDERS

Betty J. Fatula
David F. Hultsch
Tom Hickey

NUMBER VII IN A SERIES

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TOPICAL PAPERS: SERIES I
EDUCATIONAL PROGRAMMING
and
COMMUNITY RESEARCH IN GERONTOLOGY

Edited by Tom Hickey

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Education Programming and Community Research in Gerontology

Edited by Tom Hickey

Gerontology Center
Amy Gardner House
Pennsylvania State University
University Park, Pa. 16802

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Preface

This publication has enabled the Gerontology Center to combine the objectives of two major goals; the development and dissemination of educational materials concerning aging and older persons, and the writing and publication of professional papers by Center staff members.

It is our sincere hope that this series will serve as a useful resource for continuing educators, program planners, practitioners and all others interested in learning more about gerontology.

Papers are available through the Gerontology Center, Amy Gardner House, Pennsylvania State University, University Park, Pennsylvania 16802.

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A gerontological research focus has looked at the impact of the residential setting on the elderly; resulting in environmental changes to improve perception and adaptation levels.

Another trend is the development of training programs for providers of services to the aged. Evaluation of effectiveness of most of these programs has been limited, providing few answers about types of programs needed, and technology required for teaching adults.

In this project, research on sensory loss and environmental adaptation were translated into a 3-hour training program with lecture, film, discussion, and simulation. Using a non-equivalent control group design, the program was evaluated for content effectiveness and techniques of adult instruction. Participants were 400 women (18-70 yrs.) from three contexts: institutional staff, agency workers, and interested volunteers.

Effects of program content on $\bar{S}s$ X and X context X instructional format are the subject of this paper. Significant ratings were given to program relevance. The meaning of positive attitude changes and differences are discussed, and preliminary data on the relationship of personality state to this type of content is summarized, with implications for content of gerontological in-service education and more structured program assessment.

The Gerontology Manpower Development Project at The Pennsylvania State University was initiated in 1971 to accomplish the following objectives: (1) To design a university-based system which would permit human service workers access to educational opportunities while continuing full-time employment; (2) To develop prototypes for improving the delivery of human services through educational involvement; (3) To develop a variety of instructional materials and modules to meet the educational needs of various sectors of human service occupations; and, (4) To encourage the participation of these service providers in non-traditional, community-based academic programs.

Various published papers (Hickey, 1974 a, b, c,), as well as those presented here earlier this week (cf. Bragg, Hameister, and Hickey; White, Hameister and Hickey; and Zerbe and Hickey) have focused separately on each of these objectives. This paper, however, deals specifically with the design, development, and evaluation of a training program which provided the basis for modifying attitudes and acquiring new information and skills about sensory impairments frequently found among (institutionalized) elderly people. This report is intended to generally summarize the second phase of this project, rather than emphasizing specific aspects of the design or the data.

SENSORY DEPRIVATION MODULE: DESIGN AND DEVELOPMENT PHASE

There were at least four major reasons for the selection of sensory deprivation as a topic for a short-term training module. First, there was interest in designing the module as a vehicle for translating the nucleus of a large body of available research data into a short-term training medium for practitioners working with dependent elderly people. It is somewhat evident from the literature that sensory impairments among the elderly can create debilitating environmental effects, leading to certain behaviors which, in turn, are frequently interpreted negatively and stereotypically by practitioners. Withdrawal, for example, which often occurs when an elderly individual loses the ability to communicate because of serious hearing loss, is often interpreted as senile behavior and is treated as such. For the development of the training program, we were more concerned with the behavioral effects of sensory loss, rather than with its physiological aspects.

The second purpose, then, was to attempt through training to provide participants with a clearer understanding of the implications of sensory loss in the elderly, and to encourage more positive attitudes toward their client population, as well as a degree of empathy with them.

It must be stated here that we had no interest in prolonging the negative stereotyping of the aged which has been somewhat prevalent in our society. We did not begin with the assumption that age necessarily causes decline in sensory capacity to such a degree that older people typically sense and perceive their environment in a dysfunctional manner. Although this is true for many older people, our interest was not in generalizing it; but rather to help practitioners become aware of it and deal effectively

with any behaviors evident of sensory impairment. Our assumption came from the notion that dependency behavior exists among elderly people which could lead to the need for institutionalization, or to the need for some type of supportive service from the community. Since this type of dependency could be assumed to be exhibited primarily by people having the most difficulty in functioning within their environment, then, the dependency might typically be related to sensory loss, which reduced the capability of an individual to adapt and cope with his environment. This kind of dependency could conceivably lead to eventual institutionalization.

The third purpose in the design of the training module was that it be focused on the providers of services in an institutional setting--especially nursing homes. At the same time, however, the ultimate attempt was to provide this basic information in such a way that the training message could also be directed to providers of community-based supportive services.

The fourth purpose involved an interest on the part of the Gerontology Manpower Development Project in learning something more generic about short-term training assessment. This seemed especially timely for gerontological education and training, as well as for manpower development nationally, where much recent emphasis has been placed on community-based short-term training for existing service providers. With this in mind, we began the initial stages of designing the evaluation of short-term training for its effectiveness, as well as its content validity in relation to research knowledge; and in terms of its reliability in contexts other than those of institutional settings. We were specifically interested in producing a training package that would stand on its own merits, rather than one with success criteria based on instructor charisma or an audiovisual medium.

RESEARCH IN THE AREA OF SENSORY LOSS

There is an extensive amount of literature extending over the past twenty years which reports the dimensions and variations of sensory losses related to age, as well as the resulting typical behaviors and adaptations to immediate environment (Chapanis, 1950; Crouch, 1967; Fisher, 1968; Geldard and Crockett, 1930; Jonouskova, 1955; Kleemeier and Justiss, 1955; Obi, 1954; Slataper, 1950). At the present time this research area is usually associated with Leon Pastalan at the University of Michigan. Pastalan has been working extensively on constructing simulation models which duplicate relevant environmental experiences of an elderly population suffering from sensory impairment. His studies have dealt with isolating those factors within the environment which exacerbate the existing environmental restrictions imposed by sensory loss. His techniques include the use of devices designed to simulate sensory loss. Exercises are conducted for the purpose of delineating certain environmental aberrations incurred through sensory deprivation. This information then becomes the basis for redesigning, eliminating, or adapting problem areas. Pastalan's simulation techniques and data were of interest to us in the designing of the module. However, unlike Pastalan, we were not as concerned with precise, in-depth simulation of sensory change with age. Rather, we directed our efforts to the application, or translation of research to an applied setting as well as to the utilization of simulation techniques for the purpose of creating for the trainees a realistic insight into the difficulties of coping with the distorted environmental feedback resulting from sight and hearing loss.

PROCEDURE

For obvious reasons, a number of decisions concerning the design and development of the training module were based on the necessity of making the program flexible, portable, and relatively inexpensive. At the same time, it

was necessary to keep in mind certain basic learning principles, not the least of which is the well-known tenet advising that for optimum learning to occur, the student must be actively involved in the learning situation, rather than reacting in a passive way. This was especially important in the Sensory Deprivation Module where we were attempting to affect behavioral change involving attitudes and empathy.

It was clear that, for this module, simulation exercises of an empathic nature--much like Pastalan's research projects--would be the most effective method of presenting training concepts. However, this would have required expensive equipment and complex directions, and was incompatible to the need to keep the program inexpensive, portable, and flexible.

Considering these needs, the decision was made to concentrate on only two sensory modalities--visual and hearing--as the basis of the module content, as well as the basis of the simulation exercises. To implement our decision, the University's psychology labs tested various apparatus which would effectively simulate visual and hearing loss, while at the same time meeting our criteria for large scale inexpensive training. We elected from several choices to use commercially produced, noise-control, wax ear plugs, and ordinary, inexpensive sun lamp goggles which were coated for distortion. The ear plugs dulled hearing to the extent that it was difficult when wearing them to hear ordinary conversational tones. Although the sun lamp goggles did not actually simulate the precise physiological phenomena resulting from various types of visual loss, they did effectively impair sight. This was ideal, since our goal in using the simulation exercises was to provide a hard-impact experience for the most profound effect.

The next step in the development and design of the first draft of the training module involved devising simulation exercises and writing and producing

a short five-minute training film, "Make A Wish." The film is shown at the onset of the program to give insight into some of the problems of daily living resulting from sensory deprivation as experienced by an elderly woman residing with her children. It depicts one brief incident--a family birthday party for the woman and her small granddaughter. The action is seen and heard from both the child's and the grandmother's perspective. At these latter points, the photography is deliberately blurred, and the sound is distorted and muffled for effective contrast and simulation. The film is used as a stimulant for initiating discussion, and as an introduction to the entire module.

In order to obtain constructive feedback on problem areas of the module, the first draft of the training module was presented in a variety of ways to a sophisticated audience. Graduate students and faculty in social and psychological gerontology reacted to these materials individually and collectively with suggestions for program improvement. Also, the program in its entirety was presented to undergraduate classes in aging, as well as to a representative sample of practitioners from the geriatrics unit of a large state mental hospital. There was no structured assessment of this phase. It merely reflected our interest in getting multiple reactions, suggestions, and comments to what had been developed for subsequent program refinement.

After this phase, an ongoing evaluative research program was initiated as an integral part of the training module. The remainder of the paper will discuss early and present research efforts as they were related to various facets of the program in presentation.

SENSORY DEPRIVATION RESEARCH PROGRAM: A STUDY OF ADULT AGE VARIABLES ON MEANINGFUL MATERIAL IN NATURALISTIC SETTINGS

Early in the program, evaluation processes mainly involved assessing program effectiveness through instruments measuring individual satisfaction

with program content; and through observation and self reporting on transfer of training. Some attempt was made to measure attitude change. The results of this research will be reported elsewhere (Hickey, in process). This paper focuses on a subsequent phase of the project based on a more rigorous quasi-experimental, non-equivalent control group design (Campbell and Stanley, 1963).

One of the main concerns of this research was the problem of fully assessing training effectiveness. On the surface this would appear to be a fairly straightforward process involving matching measurements to training objectives. However, when one considers this type of assessment in depth, it becomes immediately apparent that much more is involved. Certainly content measurements and attitude scales are of major importance in gathering these kinds of data. However, of equal, or perhaps greater importance, are questions of whether the learning needs of adult participants are being met. The two variables, adult learning and program content, are so intricately interrelated that any research attempting to evaluate training program effectiveness must be designed in such a way that both aspects of the training situation must be explored. Data processed from such research is essential not only from the standpoint of devising successful training programs, but also from the standpoint of the entire state-of-the-art in gerontological training. To teach adults, we must reach them, and we can only do so by becoming cognizant of specific adult learning needs in the context of the actual classroom situation.

The various modules developed by the Gerontology Manpower Training Project have been designed for presentation to a broad variety of participants. There is a wide representation of abilities, education, age, and other demographic characteristics. To assess training effectiveness, it became important to measure the interrelation of a number of variables; content, mode of presentation, learning differences between age groups, attitudinal change and

personality state vs. trait differences, abilities and education.

The decision to measure the effectiveness of two different modes of presentation--personal contact and videotape training-was based on a major project goal of achieving the wide dissemination of gerontological training, within the limits of cost, convenience, availability, and flexibility. The medium of videotape training was selected as an ideal choice for meeting these criteria.

RESEARCH IN ADULT LEARNING

Although there is a certain amount of literature related either directly or indirectly to adult education (e.g., Botwinick, 1967; Houle, 1961 and 1972; Jensen, Liveright, Hallenbeck, 1964; Johnston and Rivera, 1965; Knowles, 1962; Kuhlen, 1963; Lorge, 1963; Thorndike, 1928), in most cases the research inconclusively results in more questions than answers. Adult education literature fails to provide effective models on which to base classroom techniques or content that best meet adult learning needs. Although there is literature concerning the differentiation of adult cognitive and personality parameters, there is little (if any) research describing the application of pertinent findings to naturalistic settings. To further illustrate: we were interested in learning something about the impact of personally relevant (and sometimes threatening) materials on various types of practitioners who work regularly with the elderly. To the best of our knowledge, this question has yet to be fully explored anywhere in the field. Gerontologists have typically been devoting much time to the quantitative aspects of the provision of services--i.e., locating and training sufficient numbers of people to plan, develop, and deliver service programs at state and county levels with little emphasis on the notion of quality, that is the type of person who is matched to a specific gerontological position or job. This

is not to imply criticism here of the manpower development movement in gerontology in the various states or nationally. However, if university-based leadership in this field is going to continue to provide guidance and assistance for the long-range future--as well as assisting in the planning and development of necessary short-term programs--then we must begin to look very seriously at the question of capability, interest, and match, between a given service provider and the client or target population.

Since the literature in the field is so ambiguous and lacking in theory and models on which to base research in adult education for gerontology, the approach of this project was somewhat exploratory and pragmatic, directed toward the further refinement of assumptions and hypotheses.

METHOD

Subjects

Participants in this research consisted of 322 women working in institutions, agencies, or community programs including full-time and part-time employees at all occupational levels, as well as volunteers and those merely interested in aging. Ages ranged from 18-74 with a group mean age of 42.5. Mean education equaled high school graduation plus three years of technical school. Years of employment ranged from newly employed to 52 years--with a mean of 6.67 years. Thirty-six percent of the subjects were nurses and the remaining 64 percent represented a variety of positions, including administrators, cooperative extension home economists, nutrition and nurses aides, volunteers, and individuals with aged parents.

Instruments

With the exception of the content measure developed by the authors, all instruments used in the research program were adapted (at least in part)

from published instruments with established validity and reliability data.

Ability and personality trait baselines were established through the administration of the Vocabulary, Inference and Operations tests of the "Kit of reference tests for cognitive ability factors" written by French, J., Ecstrom, R., and Price, L. of Educational Testing Services, Princeton, N.J. 1963, and the "16PF Personality Factor Questionnaire," published by the Institute for Personality and Ability Testing, Champaign, Illinois.

Knowledge gain was measured using alternate forms of a 20-question content measure which were administered to several groups of university undergraduates to establish reliability. Both forms were equally divided among research subjects for both pre and post testing.

Alternate forms of a personality state questionnaire from "The EIGHT state questionnaire" currently being developed by Dr. James Curran, Department of Psychology, Purdue University, were administered prior to and during training.

Pre and post attitude measurements were acquired using the "Opinions about People Form A," an attitude scale published by the Ontario Welfare Council, Section on Aging. Although this instrument was validated mainly for use as a discussion stimulant, the reliability of the instrument has been tested in an evaluation context. Admittedly, there is some doubt concerning its effectiveness as an evaluation tool, however, of the existing choices of an instrument measuring these kinds of parameters, this seemed one of the better instruments.

Research Procedure

Using Campbell's (1963) Quasi-Experimental, non-equivalent control group design we tested in conjunction with training 15 groups of 20 to 30

subjects at sites throughout Pennsylvania. Groups were divided by random assignment into experimental and control groups with all groups receiving training. Control groups were given the training one week after pre and post testing. Following training, the control groups were then retested for knowledge gain and attitude change. Half of each group received videotape training and half received personal contact training with the same instructor for both modes of presentation.

Ability, personality trait, and demographic baselines were established through testing occurring one week before pretesting and training at each site. Control groups were tested before and after a time period roughly equivalent to the same time span required for the training program to take place. Through demographic information, subjects were divided into three age groups: 18-34, 35-49, and 50 years and over.

RESULTS

At this point in time, complete data analysis is in process and current results according to the research design are somewhat inconclusive, and as yet, not in useful form. However, initial analysis has revealed certain trends which we wish to report in this type of summary paper. There appear to be some age differences although results are mixed. Age appears to be a factor in the score gain on before-and-after content measures. Group comparisons indicate all groups gained after training, with the younger age groups showing higher scores. However, when pretest scores are examined, it becomes apparent that each group gained equally, and age seemed not to be a factor. Although change score evaluations seem to indicate age differences do exist, data also indicates that these differences might be explained equally well by other variables such as education, ability, and certain personality states.

For those people not familiar with the "Opinions About People" attitude scale, this instrument was designed for use in programs involving in-service practitioners working with the elderly. It measures seven attitude factors:

1. Realistic Toughness toward aging (Cynicism)
2. Denial of effects of aging
3. Anxiety about aging
4. Social distance to the old
5. Family responsibility toward aged parents
6. Public responsibility toward aged people
7. Unfavorable stereotype versus acceptance

Generally, the factors most exciting in our data were those involving cynicism about aging, denial of aging, anxiety about aging and stereotyping. There seems to be a definite indication that older people began the training with a more negative view of aging than younger groups in all categories of attitudes. A number of these attitudes became more negative for this age group after training: cynicism about aging, anxiety about aging, and social distance from the aged. All changed in a negative direction. For all age groups, training seemed to change attitudes concerning stereotyping in a more positive direction. However, at the same time, training also resulted in higher anxiety about aging in all age groups. This might be explained by the assumption that training resulted in a more realistic attitude about aging, with more anxiety as the result, as well as slightly increased denial among the younger trainees. The data reflecting attitudes toward social responsibility for the aged seems to bear this out because for all age groups, post test scores indicated a more positive attitude in this direction, which was predictable as a function of the awareness of the needs of the aged which was fostered by the program.

We found no apparent difference in effectiveness of videotape training versus personal contact training; however, there is some evidence that the personal contact training caused more anxiety about aging than the videotape presentation, especially in the older age group.

Although correlations in the matrix were not convincing, there were a number of interesting and potentially significant relationships. It can be seen that interactions among a number of the variables seem to hold up. For example, age, education, and abilities show some relationship to stereotyping, cynicism about aging, and social distance from the aged. Anxiety as a personality state, shows some interaction with age, ability, and with anxiety as an attitude toward aging. All of these correlates are significant at the .001 level using a two-tailed test of significance.

DISCUSSION

Most of the outcomes discussed above are based on an incomplete analysis of the data. Furthermore, specific analytic methodology, such as multiple regression and covariance, seem to be indicated. Our current analysis suggests some interesting relationships, which may surface more clearly with subsequent statistical interpretations.

Earlier in this paper, we discussed the inadequacy of most adult education research in providing models for further research or practical application. At this point, the inconclusive evidence of our study (based on initial analysis) and some of the other adult education research alluded to previously, raises some pertinent questions. First of all, we question the typical experimental-control design using two groups, as being appropriate for measuring these kinds of variables. Considering that training programs are for the most part, short-term and intense, the practice of measuring the effectiveness of this approach could be improved by looking directly in a time series of observations at behavior linked to the learning objectives. There is some question here

regarding the mode of measuring knowledge and skill acquisition. For example, in the earlier phase of this project (Hickey, in process), projective-type measures were used to elicit the effectiveness of trainsmitting information. These measures were, admittedly, more disguised than the current one. Improvement was statistically significant for all groups. The results of the present phase were not as convincing, although the measures are not at all comparable. Thus, there are some obvious questions about how one diagnostically measures this in educational programs of very short duration. We must ask the question, are we measuring what happened? For example, we cannot be certain that the answer an individual indicates on an attitude scale is really a reflection of his actual behavior toward the elderly. In earlier research (Hickey, 1974), it was found that black institutional workers scored lowest on attitude toward aging scales. Yet when interviews and observations were made, it was found that this same group received the highest praise and ratings for their treatment and understanding of the elderly residents.

Obviously, to control for as many intervening variables as possible, it is necessary to gather an equally large amount of data. When research is based on a training program occurring over a short period of time, is it not logical to question whether the test-taking itself interferes with learning, especially when there are a number or measurements administered before, during, and after training? The purpose of attempting to achieve valid results by applying rigid controls in design, might be defeated at the onset by those very same controls. In light of the need at this time for sound information regarding adult learning, it would seem imperative that questions like these need to be examined. Perhaps it is time to begin designing research programs for the purpose of investigating new research approaches in this area.

We realize the tentative nature of reporting these kinds of findings, but this is really almost the only effective way to deal with this kind of information in a fifteen-minute presentation. When the results are more fully processed, subsequent reports and papers will deal with very specific aspects of these results. Also, in subsequent papers and reports, we will be making very specific suggestions about the appropriateness of different methodologies and research designs for the short-term training of adults. It should be obvious that we are seriously questioning these somewhat traditional approaches, which are frequently suggested and urged upon us by funding agencies with a commitment to more rigorous forms of evaluation. They, also, all too often represent the more secure and familiar approach for academicians in behavioral sciences.

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